



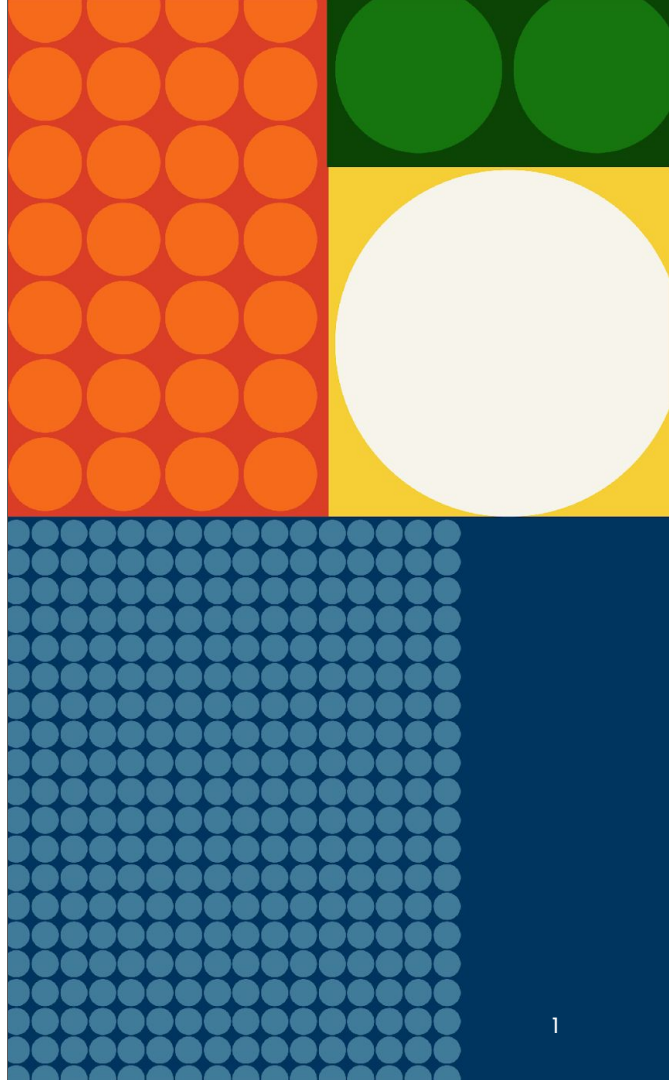
Powered by **INTERNET2**

Oldies but Goodies: Evolving eduroam and Certificate Services

Sara Jeans, Internet2

Mary Bull, Internet2

6/3/25



Rebooting the InCommon Certificate Service

Changing Landscape

Why This Matters

What's Shifting

- Certificate Lifetimes Shrinking (47 days by 2029, possibly even shorter)
- Industry wide changes are reshaping how certificates are managed
- Advancements in quantum computing is accelerating the need for agility
- Major trust stores are strongly pushing automation, and then sometimes accelerating the change



The industry is forcing change - InCommon is working to get us ahead of it.

InCommon® Forward together.

InCommon Certificate Service is Changing

Quick Overview



Stays the Same

- **The Core ethos of the service remains the same**
- Popular service types shift platforms, more well suited to modern needs



What's Changing

- Shifting less well adopted services to optional add-ons
- A updated, service-tailored Agreement that address considerations of the current world

Leverage InCommon Catalysts: Commercial providers tightly linked to the R&E community

Cert Management is Changing Fast

Automation is the Way to Go. Thinking both short and long term.

What's Happening

Certificate Lifetimes Are Shrinking

- TLS Moving toward ~47-day certificates by 2029
- **CA/B forum baseline requirements are driving many more conversation about private PKI – especially for eduroam**

Industry Shift Toward Automation

- Browsers and trust stores pushing automation
- Security expectations increasing
- **Some timelines shift – but direction is clear**

Organizations must adapt

- **Post Quantum is here**
- **Steady state is not an option any more**

Bottom Line: Shorter certificate lifetimes make automation essential.

The goal is to adopt it in a way that remains flexible across vendors and tools, for the long term.

Cert Management is Changing Fast

Automation is the Way to Go. Thinking both short and long term.

How Folks Can Respond

Automate the Lifecycle

- Use ACME and APIs to issue and renew certificates
- Eliminate manual tracking and renewals

Leverage Platform Capabilities Today

- ACME, SCEP / EST, REST APIs, CMP, WAEP
- Certificate Discovery

Use Open, Flexible Tooling

- Standards based clients (ACME)
- Community solutions

Build Vendor-Agnostic Practices Long Term

- Design workflows that can work across CAs
- Focus on standards, not platform long term

Bottom Line: Shorter certificate lifetimes make automation essential.
The goal is to adopt it in a way that remains flexible across vendors and tools, for the long term.

Rebooting eduroam in the US

Chapters for Today

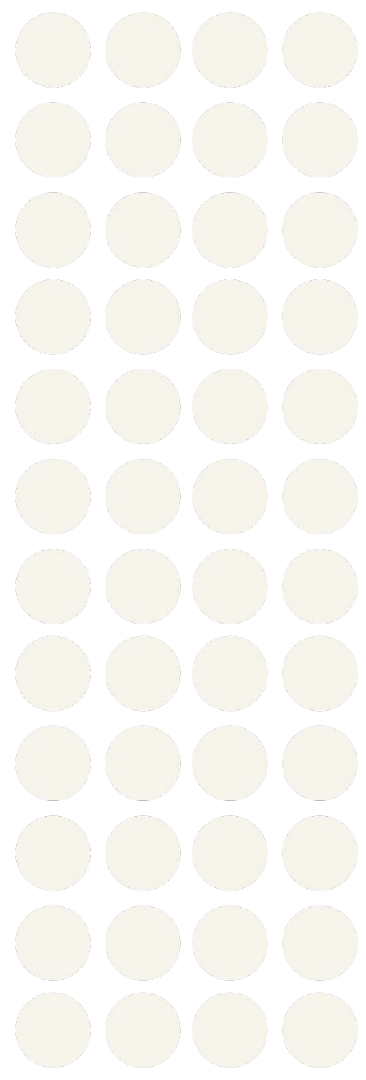
Chapter 1: Radius Infrastructure

Chapter 2: Human infrastructure

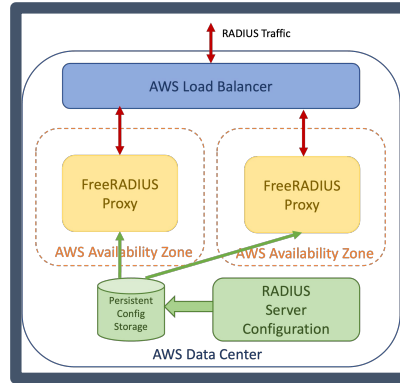


Chapter 1: RADIUS Infrastructure

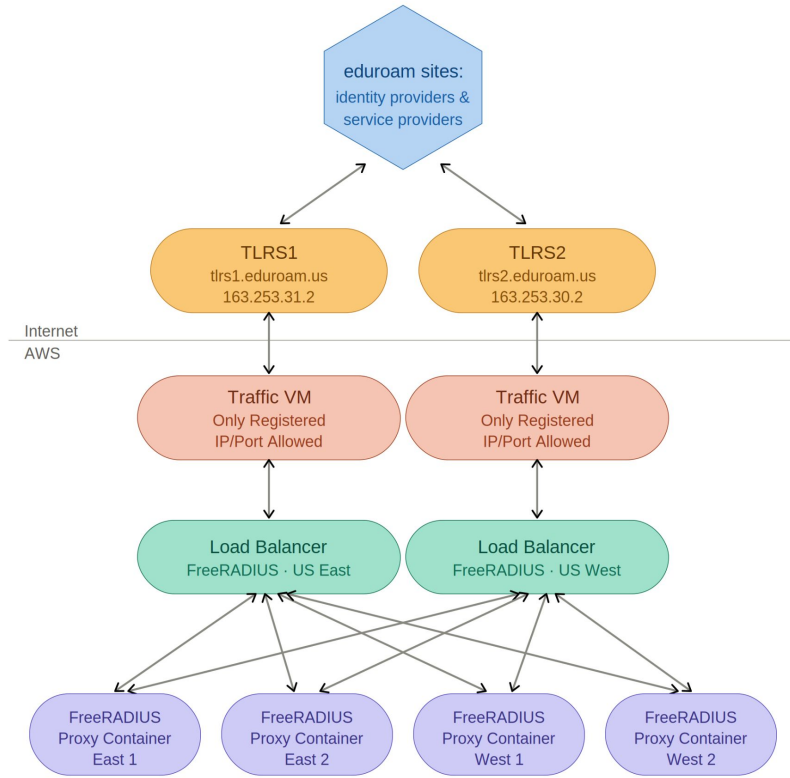
Chapter 2: Human Infrastructure



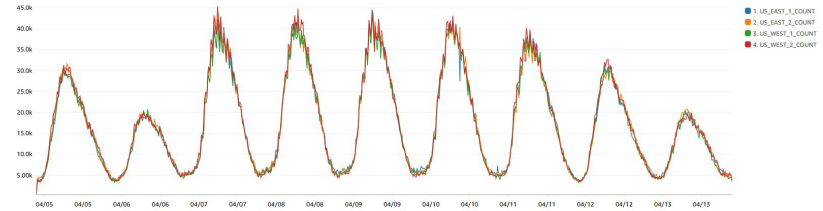
Old Load Balancing Architecture



New Load Balancing Architecture



Released:
March 2025 (West Coast)
April 2025 (East Coast)

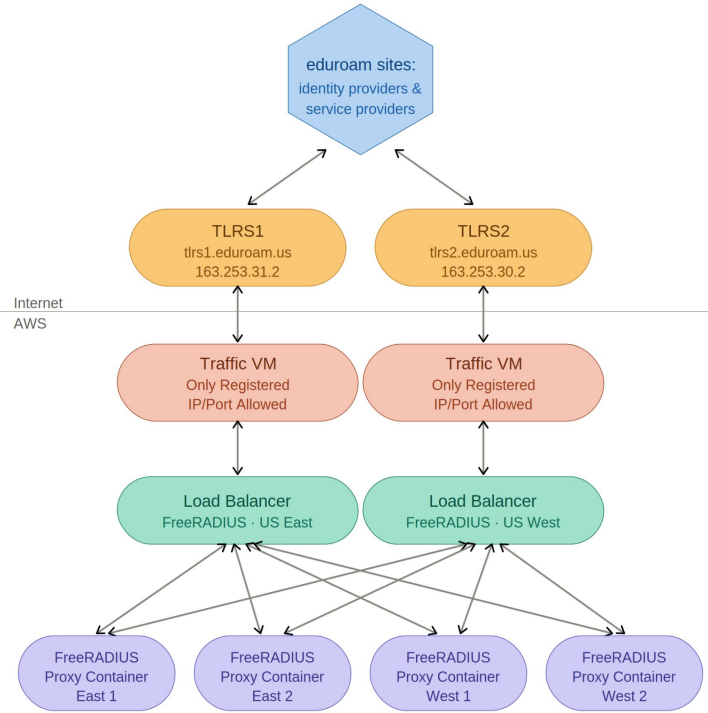
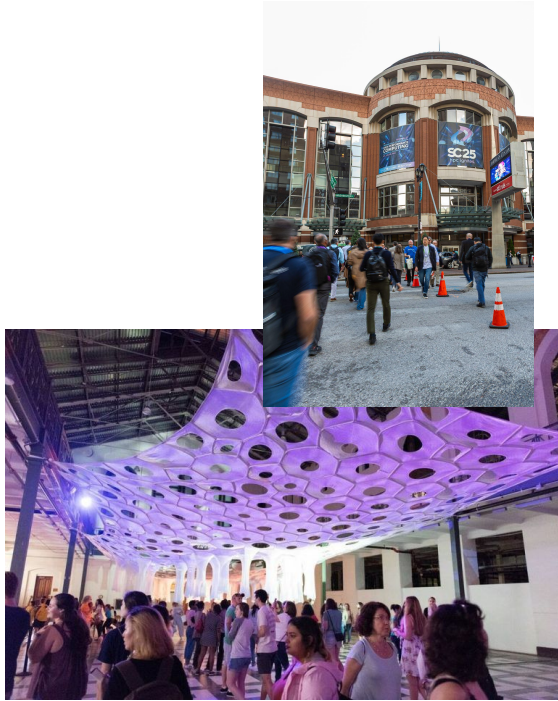


**Balancing
by EAP
Session =
Predictable
Scaling
Capacity**



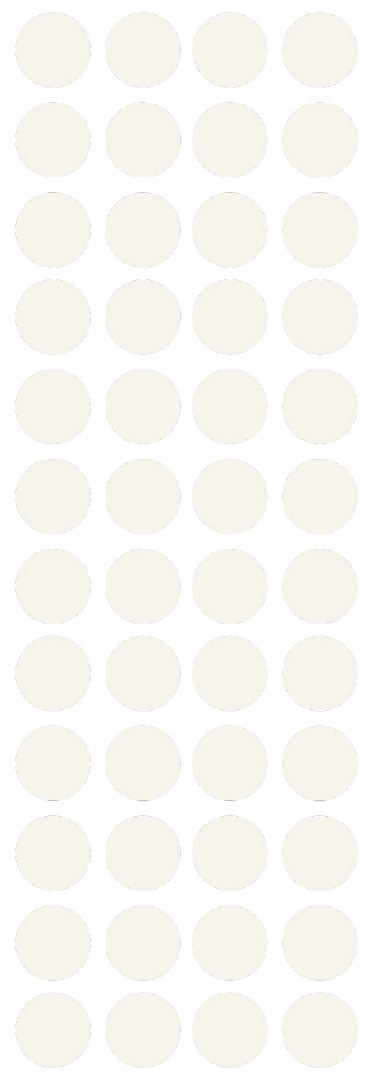
**Mark Donnelly
on high volume
RADIUS proxy**

Rate Limiting - does it matter?



Chapter 1: RADIUS Infrastructure

Chapter 2: Human Infrastructure



SECURE WIFI FOR THE ACADEMIC COMMUNITY

Why join eduroam?

- Invest in the learning community
- Help students, faculty, and staff
- Get online quickly and securely
- 38,000 locations worldwide!

Plan campus architecture

- Offer better than guest service
 - Directly connect (on captive portal)
 - Plan VLANs in IP address space

Provision users

- RADIUS ready?
 - Managed IP services?
 - Which EAP method?
 - Option for eduroam as main SSID
- US-based
 - Sign agreement
 - Option to have a 90-day trial
 - Determine affordable annual fee

Sign agreement and determine fees

eduroam admin

- Provision users
- Support content
- Allocate staff for roles

Configure portal access and use

- SET UP PUBLIC CONTACT
 - Support
 - Configuration
 - Policy
 - Organization
- Configuration guides
 - Keep 30 days of logs
 - No RADIUS accounting
 - Configure failover

Plan device configuration

- Set up RADIUS
- Set up eduroam SSID
 - Point to RADIUS configuration
 - Configure failover
- Set up Wi-Fi

eduroam Configuration Assistant Tool (CAT)

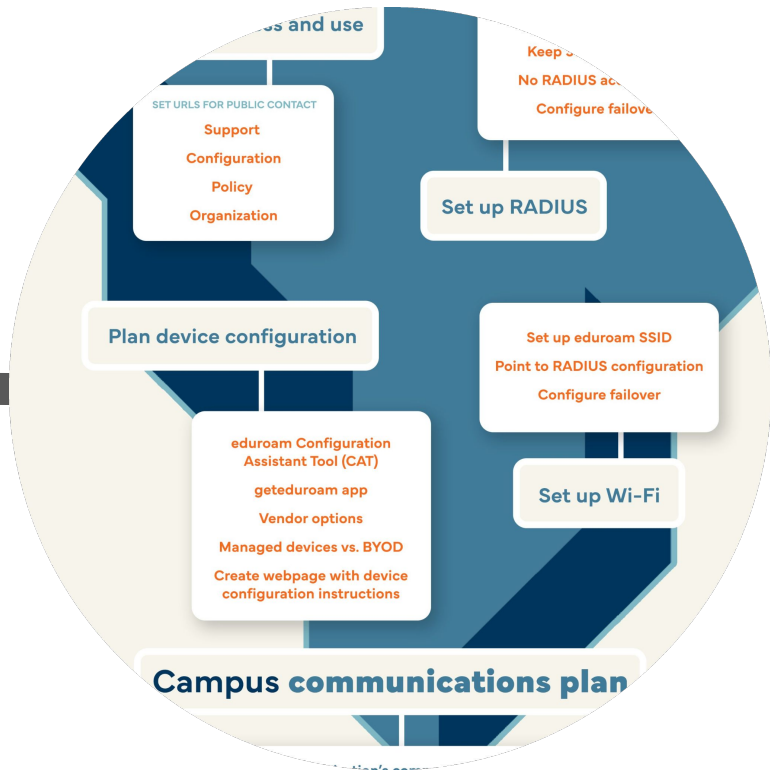
- geteduroam app
- Vendor options
- Managed devices vs. BYOD
- Create webpage with device configuration instructions

Campus communications plan

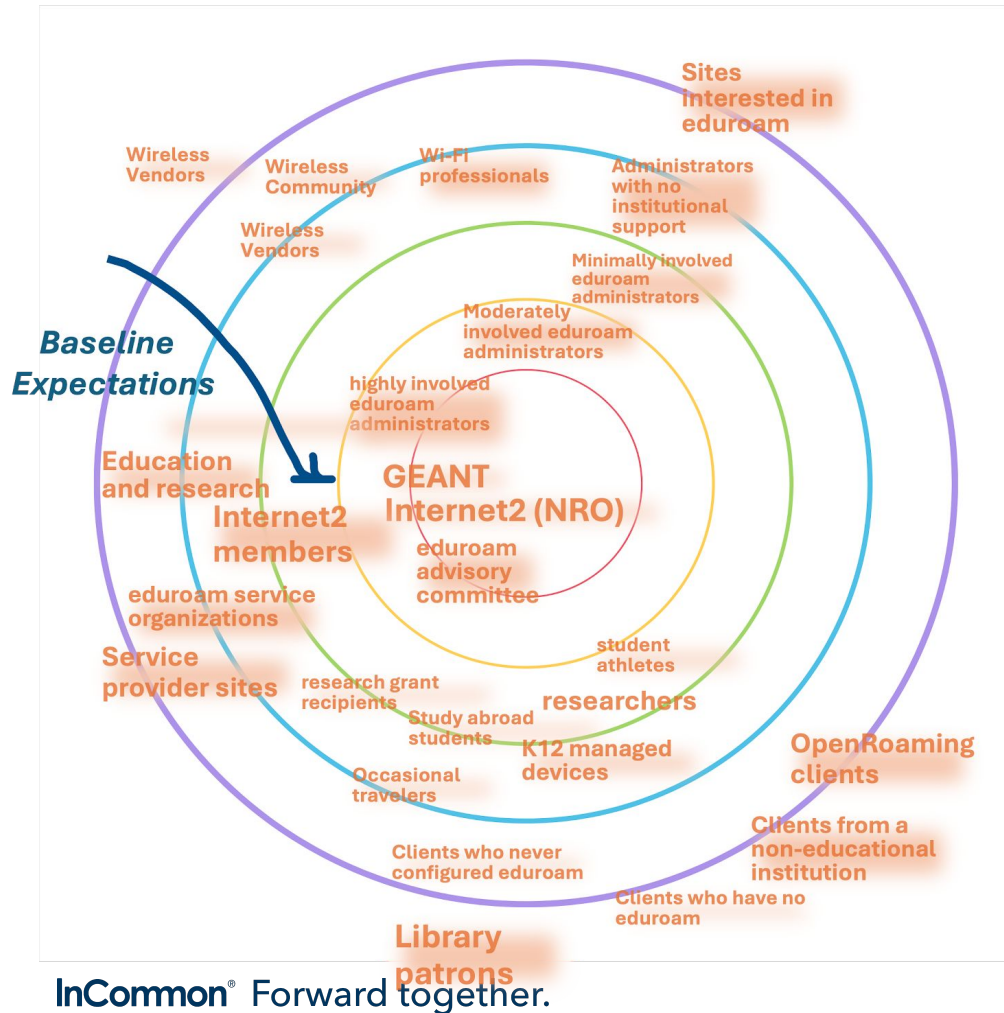
- Use your organization's communication resources
 - Choose a team up date
 - Work with the press without software
 - Plan a press release
 - Get users enrolled at home

STAY INVOLVED WITH THE eduroam COMMUNITY

- Maintain eduroam as an active part of your infrastructure
 - Look at reports/analyses and logs
 - Investigate Baseline Expectations
 - Join the eduroam-admin list
 - Read sAC meeting minutes
- Email help@eduroam.org for support and information
- Attend Mobility Day at TU/e

Much of the work to keep eduroam running happens outside of the top-level RADIUS servers.



Baseline Expectations aims to increase engagement toward the center

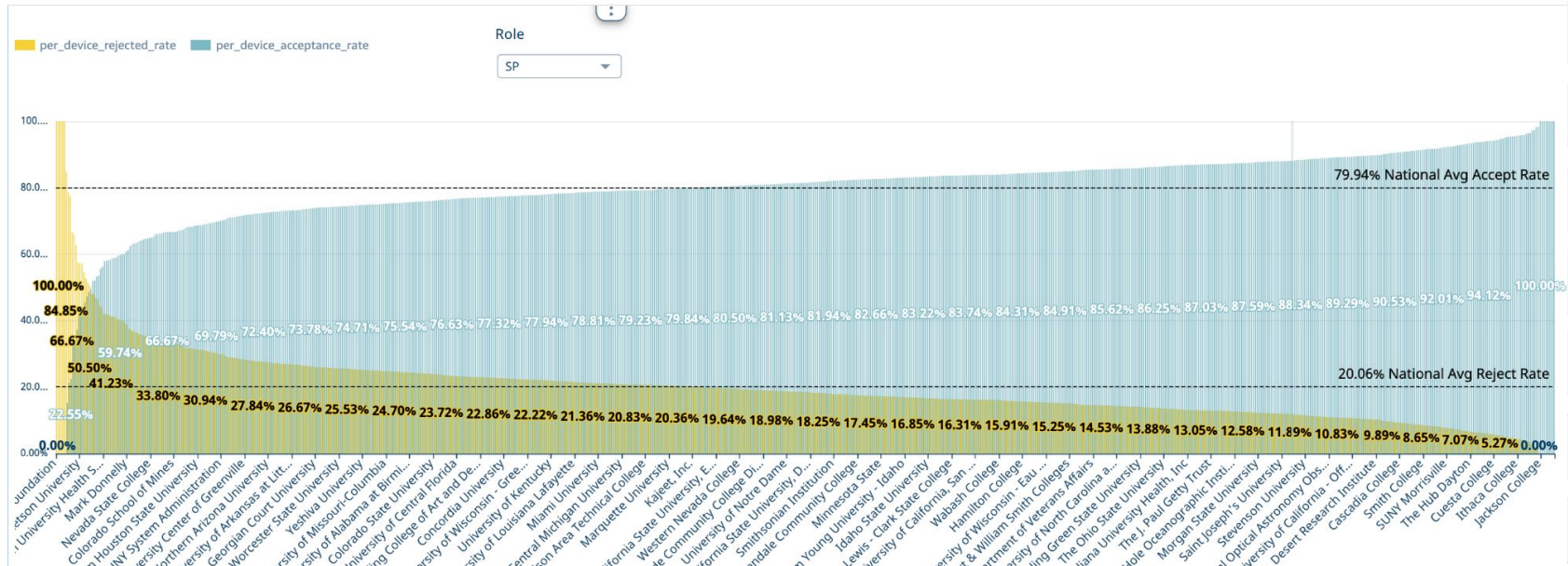
Data informs effective communication...

Start Date:
 YYYY/MM/DD

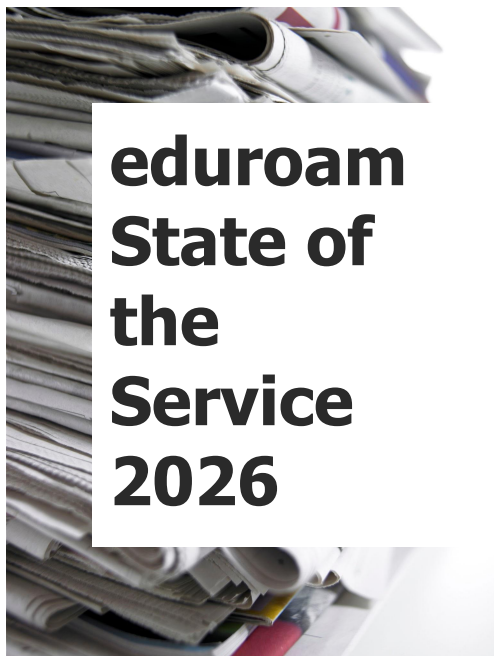
End Date:
 YYYY/MM/DD

So or Basic:

EDP Name:



...but communication includes context, storytelling, and technical documentation



IAM Online US Play all

This section contains the IAM Online webinars organised by InCommon/Internet2.



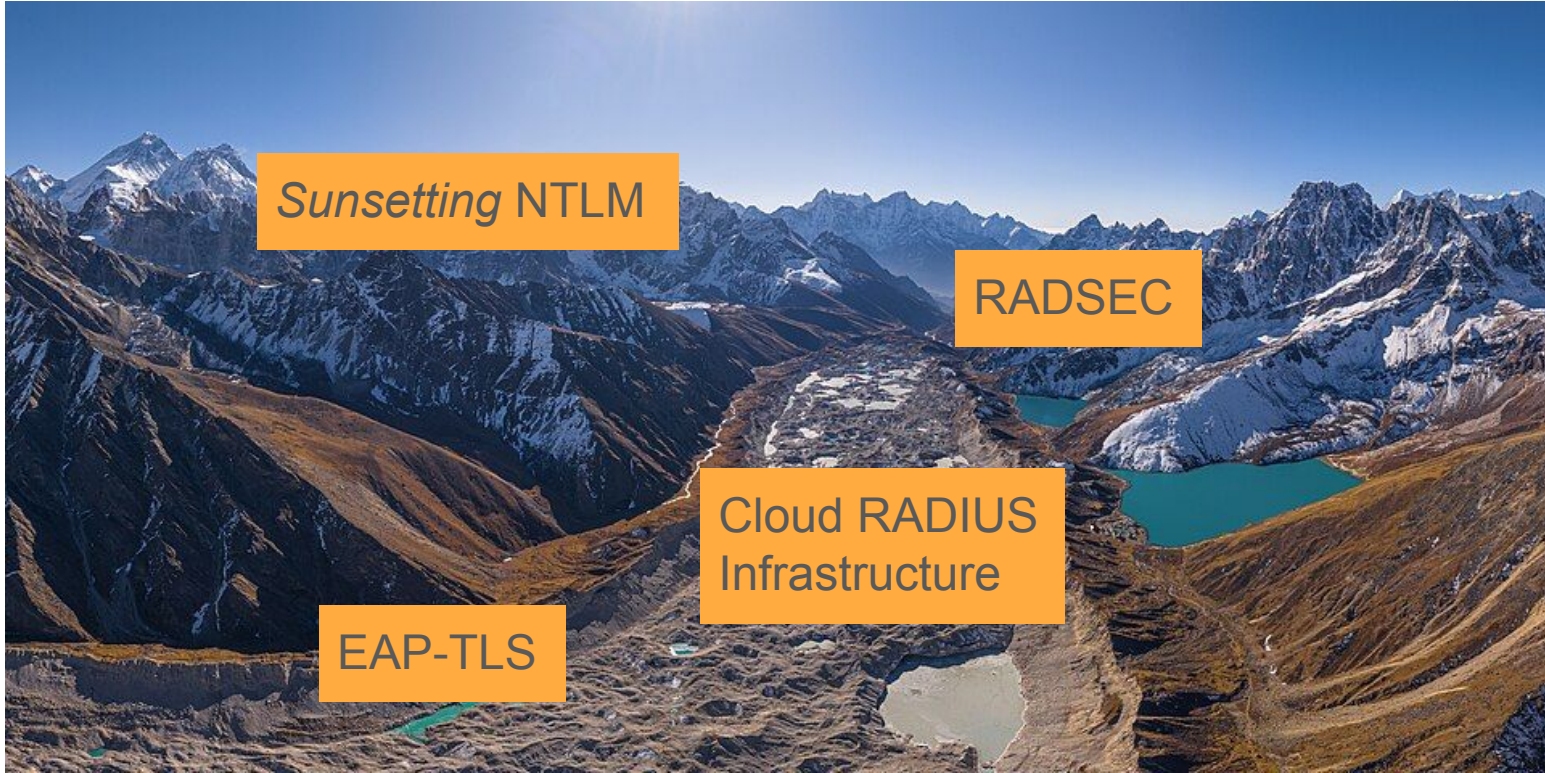
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Sunsetting NTLM

RADSEC

Cloud RADIUS
Infrastructure

EAP-TLS

Sunsetting NTLM